I CLAIM:

1. Apparatus for handling and controlling the nurturing of plants, said apparatus comprising:

(a) a greenhouse for providing a first environmental zone for nurturing plants, said first zone being located in said greenhouse in a region positioned to receive substantial amounts of sunlight;

(b) a plant warehouse for providing a second environmental zone for nurturing plants, said second zone being located in said warehouse in a region substantially sheltered from sunlight;

(c) transport rails extending from within said first environmental zone to within said second environmental zone; and,

(d) a plurality of ebb and flood trays, each adapted to carry plants in a flood region of the tray, and each adapted to ride on said rails between said environmental zones while carrying said plants.

2. Apparatus as defined in claim 1, further including means for releasably coupling said trays in succession for movement along said rails as a train of trays.

3. Apparatus as defined in claim 1, further including couplers for releasably coupling said trays in succession for movement along said rails as a train of trays.

4. Apparatus as defined in claim 1, wherein said rails comprise:

(a) a first pair of rails on a first level; and,

(b) a second pair of rails on a second level, said second pair of rails being positioned above said first pair of rails.

5. A method of handling and controlling the nurturing of plants in an ebb and flood tray, said method comprising the steps of:

(a) maintaining first and second environmental zones for nurturing plants, the first of said zones being located in a structure in a region positioned to receive substantial amounts of sunlight, the second of said zones being located in a structure in a region substantially sheltered from sunlight;

(b) maintaining transport rails extending from within said first environmental zone to within said second environmental zone;

(c) adapting said tray for riding movement on said rails;

(d) positioning said tray on said rails for such movement;

(e) carrying said plants with said tray;

(f) at a first time, and if a first prescribed condition is satisfied, moving said tray with said plants along said rails from within said first environmental zone to within said second environmental zone;

(g) at a subsequent time, and if a second prescribed condition is satisfied, moving said tray with said plants along said rails from within said second environmental zone to within said first environmental zone; and,

(h) repeating steps (f) and (g) at a succession of times.

6. A method as described in claim 5, wherein:

(a) said structure in which said first environmental zone is located comprises a greenhouse; and,

(b) said structure in which said second environmental zone is located comprises a plant warehouse.

7. A method as defined in claim 5 or 6, further comprising:

(a) flooding said tray with a plant nurturing fluid at selected times at a station located along said rails; and,

(b) then draining said fluid from said tray at said station.

8. A method as described in claim 5 wherein said structure in which said first environmental zone is located comprises a greenhouse; and wherein said structure in which said second environmental zone is located comprises a plant warehouse; said method further comprising the steps of:

(a) flooding said tray with a plant nurturing fluid at selected times at a station located along said rails in said warehouse; and,

(b) after a predetermined time draining said fluid from said flooded tray at said station.

9. Apparatus for handling and controlling the nurturing of plants, said apparatus comprising an ebb and flood tray for carrying said plants and a valve for controlling fluid flow into and out from a flood region within said tray, said valve comprising:

(a) a housing extending through a bottom wall of said tray, said housing comprising:

(i) an upper section having an open inlet end for receiving a fluid flow into an interior region of said housing;

(ii) a lower section having an open outlet end for discharging a fluid flow from said interior region; and,

(iii) an intermediate section extending between said upper and lower sections; said intermediate section comprising at least one lateral opening for providing a bi-directional fluid flow path between said interior region and said flood region;

(b) a poppet assembly supported within said interior region to receive a fluid flow force from said received fluid flow, said poppet assembly being responsive to a sufficiently high fluid flow force to move between:

(i) a normally open condition whereat fluid in said a flood region is permitted by said poppet assembly to flow out from said a flood region along a path through said at least one lateral opening into said interior region, then from said interior region through said outlet end; and,

(ii) a closed condition whereat fluid flow through said outlet end is blocked by said poppet assembly and fluid received by said upper section through said inlet end is diverted by said poppet assembly from said interior region into said flood region through said at least one lateral opening.

10. Apparatus as defined in claim 9, wherein:

(a) said housing includes an annular seating disposed within said lower section; and,

(b) said poppet assembly comprises:

(i) a plug seatable on said seating, said plug including a surface positioned to receive said fluid flow force; and,

(ii) a compression spring for biasing said plug upwardly from said seating.

11. Apparatus as defined in claim 9 or 10, wherein said at least one lateral opening comprises a plurality of elongated vertically extending slots.

12. Apparatus as defined in claim 9, further comprising a perforated cage extending peripherally around said housing for impairing blockage of said fluid flow path by foreign material floating in the fluid.

13. Apparatus for handling and controlling the nurturing of plants, said apparatus comprising:

(a) a generally rectangular ebb and flood tray, said tray comprising a bottom wall and side walls bounding a flood region within said tray; and,

(b) a valve extending through said bottom wall for controlling fluid flow into and out from said flood region, said valve comprising:

(i) means for receiving a fluid flow from an external source of fluid through a top end of said valve and, in response to said flow, for diverting said flow into said flood region; and,

(ii) means responsive to the absence of said flow for permitting fluid in said flood region to drain through an outlet end of said valve.

14. Apparatus as defined in claim 12, said apparatus further comprising transport rails for carrying said tray between selected stations along said rails, said tray being adapted to ride on said rails, one of said stations including a fluid outlet facility positioned to discharge fluid from said external source downwardly through said top end of said valve when said tray is at said station on said rails.

15. Apparatus as defined in claim 13, wherein said tray includes pallet grooves positioned and sized to receive a pair of fork-lift tines.

16. Apparatus for handling and controlling the nurturing of plants, said apparatus comprising:

(a) transport rails;

(b) a plurality of generally rectangular ebb and flood trays, each tray adapted to ride on said rails, and each tray comprising a bottom wall and side walls bounding a flood region within the tray;

(c) couplers for releasably coupling said trays in succession for movement along said rails as a train of trays; and,

(d) a plurality of valves, each associated with an associated one of said trays, and each extending through the bottom wall of the associated tray for controlling fluid flow into and out from the flood region of the associated tray; each valve comprising:

(i) means for receiving a fluid flow from an external source of fluid through a top end of said valve and, in response to said flow, for diverting said flow into the flood region of the associated tray; and,

(ii) means responsive to the absence of said fluid flow for permitting fluid in the flood region of the associated tray to drain through an outlet end of the valve.

17. Apparatus as defined in claim 15, wherein said side walls of each of said trays have a top shaped to mate with a cooperatively shaped bottom of a corresponding side wall of any selected other one of said trays, thereby permitting said trays to be stacked atop one another while restraining relative horizontal movement therebetween.

18. Apparatus as defined in claim 17, further including a plurality of generally L–shaped vertical spacers for stacking selected ones of said trays with vertical space between the selected trays, each of said spacers comprising:

(a) an L-shaped top shaped to mate with the bottom of connecting ones of said side walls of any selected one of said trays; and,

(b) an L-shaped bottom shaped to mate with the top of connecting one of said side walls of any selected other one of said trays.